



Energy Supply Technical Work Group Teleconference Meeting #1

September 1, 2005



Today's Agenda

- Call to order
- Introduction of Technical Work Group members
- Review of Technical Work Group organization and logistics
- Review of Open Meeting Law Requirements
- Review and discussion of the draft Arizona greenhouse gas emissions inventory and forecast for the energy supply sector
- Review and discussion of list of potential state actions
- Discussion of next steps toward identification of priorities for analysis of options
- Call to the public
- Proposed agenda items for next meeting
- Announcements

Agenda Items 1-4

- Call to order
- Introduction of Technical Work Group members
- Review of Technical Work Group organization and logistics
- Review of Open Meeting Law Requirements

Agenda Item 5

- Review and discussion of the draft Arizona greenhouse gas emissions inventory and forecast for our sector

Arizona GHG Emissions

- Inventory and Reference Case Projections
 - Initial analysis by CCS for further discussion and revision
 - Inventory of historical emissions from 1990 to most recent data year (2000-2004, depending on sector)
 - Projection of emissions to 2020

Coverage

- Six gases per USEPA and UNFCCC guidelines
 - Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur Hexafluoride (SF₆)
 - Black Carbon considered separately
- All major emitting sectors
 - Electricity
 - Residential, Commercial, Industrial Fuel Use
 - Transportation
 - Agriculture and Forestry
 - Industrial Processes and Other Sources

Inventory Approach

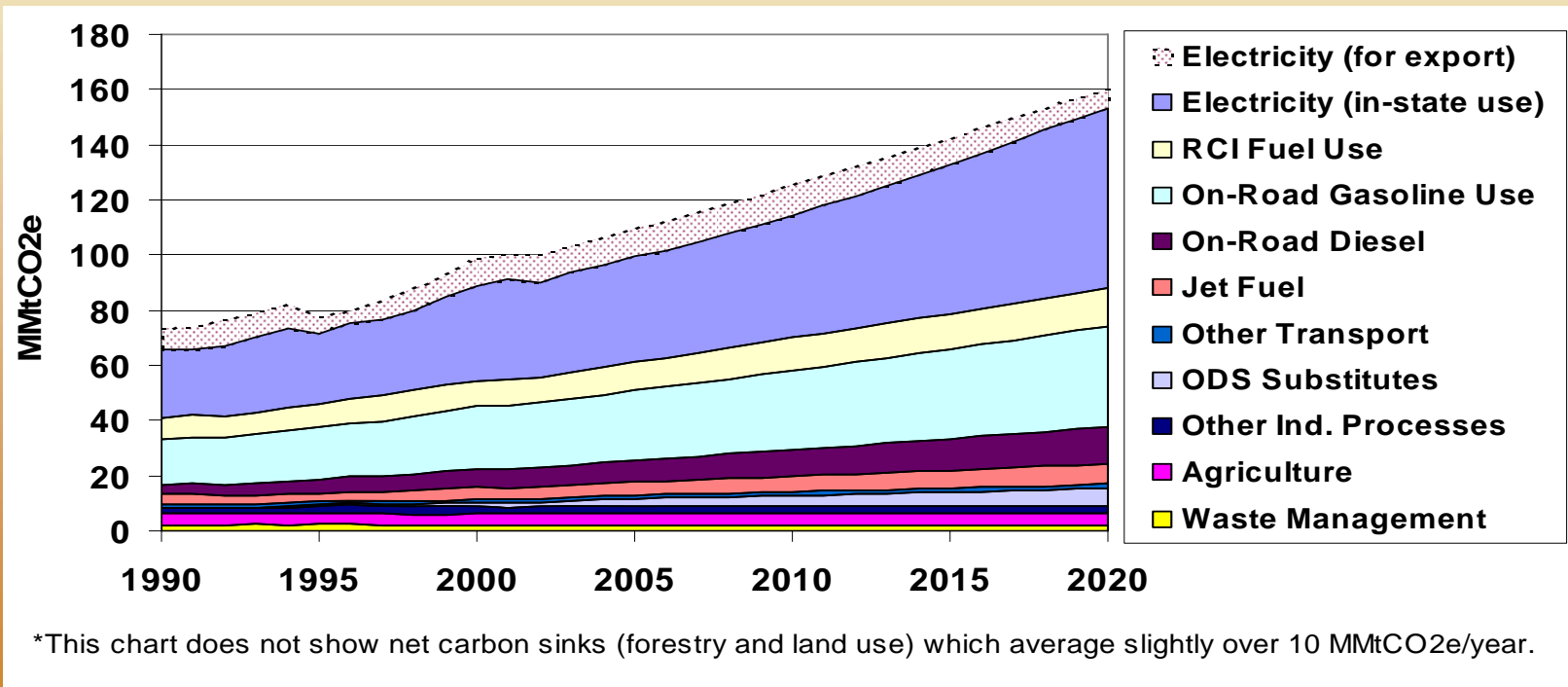
- Standard US EPA and UN methodologies, guidelines, and tools
- Emphasis on transparency, consistency, and significance
- Preference for Arizona or regional data, where available
- Consumption and production-basis emissions from electricity generation
 - Very simplified approach used for initial analysis

Projection Approach

- Reference case assumes no major changes from business-as-usual
 - Includes approved policies and actions to the extent possible (e.g. Environmental Portfolio Standard)
- Growth assumptions from existing sources
 - Electricity demand growth from AZ Corporation Commission
 - Population and economic forecasts from AZ Department of Economic Security
 - Several assumptions from US DOE's Annual Energy Outlook 2005

Arizona GHG Emissions

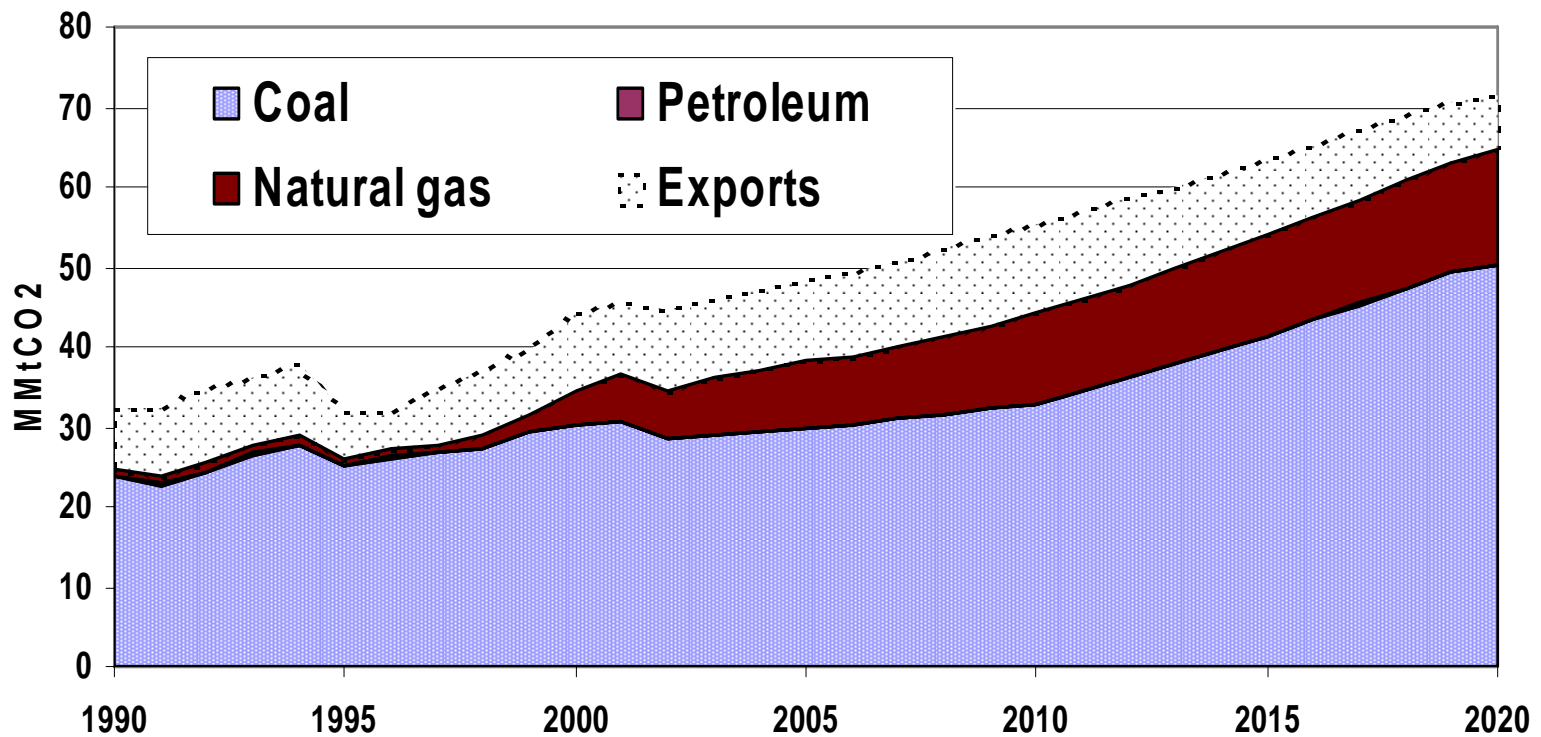
- 1990-2020



Work group issues

- Energy Supply
 - Projections of new generation sources
 - Consumption-based approach (e.g. utility fuel mix)
 - Modeling

Electricity



Electricity

- Data Sources
 - WECC 10-Year Coordinated Plan Summary
 - US DOE Energy Information Administration
 - NEMS Annual Energy Outlook 2005
 - Electric Power Annual – historic generation, consumption
 - ACC Staff Report on Environmental Portfolio Standard
 - Western Regional Air Partnership/ICF, SO₂ trading program, Implementing 10/20 goals and EE
 - Western Resource Advocates Balanced Energy Plan
- Methods
 - Apply existing estimates with 3%/year growth rate (ACC)

Electricity

- Key Assumptions and Uncertainties
 - The size, type, and timing of new power sources through 2020
 - 3%/year growth in AZ generation to 2010 (WECC), 2%/year after (NEMS)
 - Through 2010 (78% gas, 18% coal, 5% nuclear), 80/20 coal/gas after 2010
 - Sufficient wind and solar to meet 1.1% renewables requirement

Waste Management

(Million Metric Tons CO ₂ e)	1990	2000	2010	2020
Waste Management	2.1	1.9	2.0	1.9
Solid Waste Management	1.7	1.3	1.4	1.1
Wastewater Management	0.4	0.5	0.7	0.8

Agenda Item 6

- Review and discussion of list of potential state actions
- (See matrix of potential actions)

Decision criteria

- GHG reduction potential
- Cost effectiveness
- Co-benefits and ancillary impacts
- Feasibility issues

Energy Supply TWG

- Renewable and Low Emitting Energy
 - Ex.: Renewable Portfolio Standard
- Advanced Fossil Strategies
 - Ex.: Carbon Capture and Sequestration
- Other Electricity Measures
 - Ex.: Improving efficiency at existing plants
- Distributed Generation
 - Ex.: Removing barriers to CHP & other DG

Energy Supply TWG

- Emissions Policies
 - Ex.: Utility sector GHG cap & trade system
- Grid & Utility Policies
 - Ex.: Net metering
- Education and Awareness
 - Ex.: Emissions disclosure
- Natural Gas System
 - Ex.: Leak reduction program
- Hydrogen
 - Ex.: Incentives for hydrogen development

Agenda Item 7

- Discussion of next steps toward identification of priorities for analysis of options

Agenda Item 8

- Call to the public

Agenda Item 9

- Proposed agenda items for next meeting
 - Continued development of priorities for analysis?
 - Continued discussion of inventory and reference case?

Agenda Item 10

- Announcements